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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/756,395	01/14/2004	Kai-Ping Chuang	GIA 207	1884

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EXAMINER
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DEGHAN, QUEENIE S

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 03/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/756,395

Applicant(s)

CHUANG ET AL.

Examiner

Queenie Dehghan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 1-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of claims 18-28 in the reply filed on 1/19/2006 is acknowledged.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 18-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Kewitsch et al. (6,465,153). Kewitsch et al. disclose a method for forming a grating on a fiber (col. 20 line 15) comprising of providing a UV (col. 2 line 45) light source, polarizing a light beam with a half-wave plate module that rotates (col. 19 line 58) with a pre-determined polarization direction (figure 15) into a first beam that has a horizontal polarization mode and a second beam that has a vertical polarization mode, splitting the polarized light beam into two polarized light beams with a polarization beam splitting prism, irradiating the first polarized light beam (d.c. beam) onto the fiber by reflecting it with a reflection module, and forming a grating on the fiber by irradiating a second polarized light (a.c. beam) that has passed through an exposure module (phase mask)

(col. 20 lines 1 –10, figure 15), wherein the first and second light beams are uniform (of equal intensities) and are simultaneously exposed to the fiber (col. 19 lines 54-57).

Similar to the applicant's disclosure on page 7, Kewitsch et al. teach how the half-wave plate controls the power/intensities between the first and second beams on the predetermined position on the fiber (col. 19 lines 58-61) and how the same total intensity is constant across the fiber (col. 19 lines 58-63). Additionally, Kewitsch et al. disclose a step where the first polarized light beam (d.c. beam) causes variation on the fiber when it is scanned without forming a grating because it does not pass through a phase mask (col. 19 line 54-57).

4. Claims 18-22 are rejected under 35 U.S.C. 102(a) as being anticipated by Mizrahi et al. (6,614,959). Mizrahi et al. disclose a method for forming a grating on a photosensitive fiber comprising of providing a UV light source, converting a light beam into a polarized light beam by passing through a half-wave plate module mounted on a rotational stage, splitting the polarized light beam into a first polarized light beam and a second polarized light beam with a polarization beam splitting prism, and reflecting the light beams with mirrors onto the fiber (col. 7 lines 42-48, Figure 8A). Furthermore, Mizrahi et al. recite the use of a phase mask or interferometer in order to form the grating on the fiber (col. 1 lines 44-48) and provide an example where a second beam from a beam splitter travels through a mask (66) to form a grating on the fiber (col. 6 lines 10-13). Mizrahi et al. also recites a first polarized beam and second polarized beam essentially having the same intensity, because of its equal amplitude (col. 8 lines 20-21) and paths (col.6 lines 16-20), such that the fiber is exposed to the same total

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intensity across the grating length (col. 8 lines 35-37). Regarding claims 19-21, Mizrahi et al. recite an exposure method where the half-wave plate is rotatable and polarizes the light beam with a pre-determined direction into a first beam with a horizontal polarization mode and a second beam that has a vertical polarization mode (col. 3 lines 56-63, figure 8A).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 23, 24 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizrahi et al. (6,614,959), as applied to claim 18 above, in view of Kewitsch et al. (6,465,153) and Bjorklund et al. (4,093,338). Mizrahi et al. recite the use

of a phase mask or interferometer in order to form the grating on the fiber (col. 1 lines 44-48) and provide an example where a second beam from a beam splitter travels through a mask (66) to form a grating on the fiber (col. 6 lines 10-13). Mizrahi et al. do not mention a first light beam that causes a variation of refractive index without forming the grating. Kewitsch et al. teach an exposure method where a fiber (col. 20 line 15) is exposed to a second polarized light beam forms a grating on the fiber by passing through a phase mask and a first polarized light beam (d.c. beam), which causes variation on the fiber without forming a grating because it does not pass through a phase mask (col. 19 line 54-57). Bjorklund et al. disclose the use of an interferometer that forms two beams for the generation of gratings on a fiber (col. 1 lines 10-14). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the interferometer of Bjorklund et al. or the phase mask and second beam simultaneously with the first beam of Kewitsch in Mizrahi et al. exposure method, in order to generate precise gratings on fibers with more control.

8. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kewitsch et al. (6,465,153), as applied to claim 24 above, in view of Lauzon et al. (6,130,973). Kewitsch et al. do not present a step where the fiber and phase mask is installed on a movable base. Lauzon et al. teach of a base where the fiber and phase mask is mounted and translated discretely in front of a UV light beam (col. 7 lines 23-25, figure 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the translating fiber and phase mask on a base as

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disclosed by Lauzon et al. in Kewitsch et al. exposure method, in order to offer precise and control grating exposure on the fiber.

9. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizrahi et al. (6,614,959) and Kewitsch et al. (6,465,153) and Bjorklund et al. (4,093,338), as applied to claim 27 above, and in further view of Richardson et al. (Pat. Pub. 2002/0150334). The above references do not present a step where the fiber is mounted on a movable base. Richardson et al. teach of mounting a fiber on a translation stage ([0185] and figure 18). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the fiber translation stage of Richardson et al. in Mizrahi and Kewitsch et al. and Bjorklund two beam interferometer exposure method in order to achieve better control of the fiber constant exposure to the light beam.

### ***Double Patenting***

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 18-20, 22, and 28 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 7-10 and 12 of U.S. Patent No. 6,963,432 in view of Kewitsch et al. (6,465,153). Claim 7 recites an exposure method for forming a grating on a photosensitive fiber by providing a light, a beam splitter, a half wave plate, a reflection module, enabling the split light beams of equal intensities to be irradiated on a pre-determined position in the fiber. Claims 8 and 9 recite an exposure method where the half-wave plate module comprises a half-wave plate that polarizes light with a pre-determined polarization direction and a rotating base as to carry the half-wave plate. Claim 10 recites an exposure method wherein the fiber is disposed on a movable base. Claim 12 recites an exposure method wherein the light source is UV light. However, Patent 432 does not mention an exposure module or the placement of the half-wave plate before the beam splitter. Kewitsch et al. disclose a method for forming a grating on a fiber (col. 20 line 15), polarizing a light beam with a half-wave plate module that rotates (col. 19 line 58) with a pre-determined polarization direction (figure 15) into a first beam that has a horizontal polarization mode and a second beam that has a vertical polarization mode, splitting the polarized light beam into two polarized light beams with a polarization beam splitting prism, and forming a grating on the fiber by irradiating a second polarized light (a.c. beam) that has passed through an exposure module (phase mask) (col. 20 lines 1 –10, figure 15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to place the half-wave plate module prior to the beam splitter and to utilize a phase



mask, as disclosed by Kewitsch et al., as an obvious variation of Patent 432, since it is known in the art the necessity to utilized polarized light beams and a phase mask to achieve a fiber grating on the photosensitive fiber.


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Queenie Dehghan whose telephone number is (571)272-8209. The examiner can normally be reached on Monday through Friday 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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